



MEMBER SPOTLIGHT: GREG FINCH



Greg is a toxicologist and is a Research Fellow in Drug Safety R&D at Pfizer in Groton CT. He received a PhD in Ecology from the University of California, Davis CA, and was formerly an inhalation toxicologist at Lovelace in Albuquerque. His work at Pfizer initially focused on inhalation drug development and in characterizing the safety and fate of inhaled drugs, including macromolecules, then expanded more broadly to the use of nonclinical data in human health risk assessment, primarily in the area of biopharmaceutics. He has participated in advancing several drugs through late-stage development and/or registration and is currently the Drug Safety team leader for several drugs in clinical development. He belongs to a team evaluating novel drug delivery technologies, including materials used in potential nanomedicines, and has developed case-by-case tiered strategies to assess potential safety issues around these technologies.

Greg also provides strategic support to advance the application of toxicity data and risk assessment in biotherapeutics and biosimilar drug development. He is a Diplomate of the American Board of Toxicology and has been a Nanomedicines Alliance Board member since 2010.

REGULATORY AND LEGISLATIVE DEVELOPMENTS

New College for Nanotechnology

The College of Nanoscale Science and Engineering (CNSE), currently part of the University of Albany, has announced its intention to become a separate institution within the State University of New York system by the beginning of the 2014-2015 academic year. CNSE was established under the umbrella of the University of Albany in 2004 as the first college in the world exclusively dedicated to the development of nanotechnology. The college currently has nearly 200 students.

http://cnse.albany.edu/Newsroom/NewsReleases/Details/13-0716/SUNY_to_Establish_Pioneering_College_of_Nanoscale_Science_Engineering_As_Separate_Institution_Within_the_SUNY_System.aspx

Regulatory Challenges for Nanomedicines

PharmTech.com has published a piece entitled "Seeking Harmonization in Nanomedicines Regulatory Framework" in the August 2013 issue of its *Pharmaceutical Technology Europe* journal. The article covers the gradual harmonization and clarification of nanomedicine regulations in the European Union and safety issues for regulators. The European Medicines Agency is currently considering the establishment of a European Nano-Characterization Laboratory to facilitate coordination between several characterization labs within Europe. Several nations within the European Union have taken steps forward with nanomedicine regulations under the direction of national agencies, most notably France. The EU

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is also trying to solve safety and licensing coordination issues with other licensing authorities, such as the FDA and the regulatory agencies of Japan, Canada, and Australia.

<http://images2.advanstar.com/PixelMags/pharma-tech-eu/digitaledition/08-2013.html#10>

ITS Nano Research Project

The Intelligent Testing Strategies for Engineered Nanomaterials Consortium (ITS Nano), a European-based group focused on human and environmental safety for nanomaterials, has released a report entitled "Research Prioritisation to Deliver an Intelligent Testing Strategy for the Human and Environmental Safety of Nanomaterials." The report offers a research strategy for the next 20 years of

nanomedicines. In the short term, the report recommends further understanding the connections between the physicochemical, exposure, and hazard characteristics of nanomedicines. A paper on knowledge gaps and priorities is based on the data this report presents. The European Commission funded the report and their Joint Research Centre contributed to it.

<http://www.its-nano.eu/the-project/project-output>

REVIEWS AND OTHER PUBLICATIONS OF INTEREST

A vector-free microfluidic platform for intracellular delivery. Proceedings of the National Academy of Sciences, 2013, Vol. 110, No. 6, pp. 2082-2087. Armon Sharei, Janet Zoldan, Andrea Adamo, Woo Young Sim, Nahyun Cho, Emily Jackson, Shirley Mao, Sabine Schneider, Min-Joon Han, Abigail Lytton-Jean, Pamela A. Basto, Siddharth Jhunjhunwala, Jungmin Lee, Daniel A. Heller, Jeon Woong Kang, George C. Hartoularos, Kwang-Soo Kim, Daniel G. Anderson, Robert Langer, Klavs F. Jensen.

<http://www.pnas.org/content/110/6/2082>

Glucose-Responsive Microgels Integrated with Enzyme Nanocapsules for Closed-Loop Insulin Delivery. ACS Nano, July 2013, Zhen Gu, Tram T. Dang, Minglin Ma, Benjamin C. Tang, Hao Cheng, Shan Jiang, Yizhou Dong, Yunlong Zhang, and Daniel G. Anderson.

<http://pubs.acs.org/doi/abs/10.1021/nn401617u>

Nanoengineering gold particle composite fibers for cardiac tissue engineering. Journal of Materials Chemistry B, June 2013. Michal Shevach, Ben M. Maoz, Ron Feiner, Assaf Shapira, Tal Dvir.

<http://pubs.rsc.org/en/Content/ArticleLanding/2013/TB/c3tb20584c>

Mechanisms of hyperthermia in magnetic nanoparticles. Journal of Physics D: Applied Physics, July 2013, Vol. 46, No. 31. G. Vallejo-Fernandez, O. Whear, A. G. Roca, S. Hussain, J. Timmis, V. Patel, K. O'Grady.

<http://iopscience.iop.org/0022-3727/46/31/312001/>

Systemic Delivery of SapC-DOPS Has Antiangiogenic and Antitumor Effects Against Glioblastoma. Molecular Therapy, August 2013, Vol. 21, pp. 1517-1525. Jeffrey

Wojton, Zhengtao Chu, Haritha Mathsyaraja, Walter H Meisen, Nicholas Denton, Chang-Hyuk Kwon, Lionel ML Chow, Mary Palascak, Robert Franco, Tristan Bourdeau, Sherry Thornton, Michael C Ostrowski, Balveen Kaur, Xiaoyang Qi.

<http://www.nature.com/mt/journal/v21/n8/full/mt2013114a.html>

Nanoparticle Delivered Vascular Disrupting Agents (VDAs): Use of TNF-Alpha Conjugated Gold Nanoparticles for Multimodal Cancer Therapy. Molecular

Pharmaceutics, 2013, Vol. 10, Issue 5, pp. 1683-1694. Mithun M. Sheno, Isabelle Iltis, Jeunghwan Choi, Nathan A. Koonce, Gregory J. Metzger, Robert J. Griffin, and John C. Bischof.

<http://pubs.acs.org/doi/abs/10.1021/mp300505w>

A Smart Hyperthermia Nanofiber with Switchable Drug Release for Inducing Cancer Apoptosis. Advanced Functional Materials, June 2013. Young-Jin Kim, Mitsuhiro Ebara, Takao Aoyagi.

<http://onlinelibrary.wiley.com/doi/10.1002/adfm.201300746/abstract;jsessionid=058C856C14CFF7A3CE95744D13A6F160.d01t03>

One-Step Assembly of Coordination Complexes for Versatile Film and Particle Engineering. Science, July 2013, Vol. 341, No. 6142, pp. 154-157. Hirotaka Ejima, Joseph J. Richardson, Kang Liang, James P. Best, Martin P. van Koeverden, Georgina K. Such, Jiwei Cui, Frank Caruso.

<http://www.sciencemaq.org/content/341/6142/154>

Single-Antibody, Targeted Nanoparticle Delivery of Camptothecin. Molecular Pharmaceutics, 2013, Vol. 10, Issue 7, pp. 2558-2567. Han Han and Mark E. Davis.

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Self-assembled, aptamer-tethered DNA nanotrains for targeted transport of molecular drugs in cancer theranostics.

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Gold Nanoparticle Delivery of Modified CpG Stimulates Macrophages and Inhibits Tumor Growth for Enhanced Immunotherapy.

PloS One, 2013, Vol. 8, No. 5. Adam Yuh Lin, Joao Paulo Mattos Almeida, Adham Bear, Nathan Liu, Laureen Luo, Aaron Edward Foster, Rebekah Anna Drezek.

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0063550>

“pH phoresis”: A new concept that can be used for improving drug delivery to tumor cells.

Journal of Controlled Release, September 2013, Vol. 170, Issue 3, pp. 396-400. You-Yeon Won and Hoyoung Lee.

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DNA Computation in Mammalian Cells:

MicroRNA Logic Operations. Journal of the American Chemical Society, June 2013, Vol. 135, No. 28, pp. 10-512-10518. James Hemphill and Alexander Deiters.

<http://pubs.acs.org/doi/abs/10.1021/ja404350s>

In Vivo Delivery of RNAi by Reducible Interfering Nanoparticles (iNOPs).

ACS Medicinal Chemistry Letters, June 2013. Huricha

Baigude, Jie Su, Joshua McCarroll, and Tariq M. Rana.

<http://pubs.acs.org/doi/abs/10.1021/ml4001003>

Highly penetrative, drug-loaded nanocarriers improve treatment of glioblastoma.

Proceedings of the National Academy of Sciences, July 2013, Vol. 110, No. 29, pp. 11751-11756. Jiangbing Zhou, Toral R. Patel, Rachael W. Sirianni, Garth Strohbehn, Ming-Qiang Zheng, Nha Duong, Thomas Schafbauer, Anita J. Huttner, Yiyun Huang, Richard E. Carson, Ying Zhang, David J. Sullivan, Jr., Joseph M. Piepmeier, W. Mark Saltzman.

<http://www.pnas.org/content/110/29/11751>

Scalable Manufacture of Built-to-Order Nanomedicine: Spray-Assisted Layer-by-Layer Functionalization of PRINT

Nanoparticles. Advanced Materials, July 2013. Stephen W. Morton, Kevin P. Herlihy, Kevin E. Shopsowitz, Zhou J. Deng, Kevin S. Chu, Charles J. Bowerman, Joseph M. DeSimone, Paula T. Hammond.

<http://onlinelibrary.wiley.com/doi/10.1002/adma.201302025/abstract;jsessionid=07C9E4942A24251DEE1EFF4517165CE4.d03t04>

Monitoring Drug Target Engagement in Cells and Tissues Using the Cellular Thermal Shift Assay.

Science, July 2013, Vol. 341, No. 6141, pp. 84-87. Daniel Martinez Molina, Rozbeh Jafari, Marina Ignatushchenko, Takahiro Seki, E. Andreas Larsson, Chen Dan, Lekshmy Sreekumar, Yihai Cao, Pär Nordlund.

<http://www.sciencemag.org/content/341/6141/84>

CONFERENCES AND WORKSHOPS

ICANM 2013: Advanced and Nanomaterials Conference, August 12-14, 2013, Quebec, Canada

Nanomedicines
Nanobiotechnology
Nanotoxicology

<http://www.iaemm.com/ICANM2013/>

NNI Workshop: Stakeholder Perspectives on the Perception, Assessment, and Management of the Potential Risks of Nanotechnology, September 10-11, 2013, Washington, DC, USA

Comparative Risk Assessment
Risk Management

<http://www.nano.gov/node/1025>

NanoForum, September 18-20, 2013, Rome Italy

Nanomedicines
Nanotoxicology

<http://www.nanoforum.it/convegno/conference>

Pharmaceutical Nanotechnology Congregation 2013, October 15-16, 2013, London, UK

Manufacturing
Applications
Regulatory Considerations
Nanotechnology in Healthcare

<http://www.etp-nanomedicine.eu/public/news-events/events/pharmaceutical-nanotechnology-congregation-2013>

Nanocon 2013, October 16-18, 2013, Brno, Czech Republic

Bionanotechnology
 Antibacterial materials
 Molecular analysis
 Anti-tumor therapy
 Targeted drug transport
 Tissue engineering
 Nano-implants

<http://www.nanocon.eu/en/>

6th International Symposium on Nanotechnology, Occupational and Environmental Health, October 28-31, 2013, Nagoya, Japan

Nanomaterial processing and characterization
 Health effects and toxicity
 ADME
 Environmental toxicity
 Risk assessment and management

<http://square.umin.ac.jp/nanoeh6/index.html>

Carbon-Based Nano-Materials and Devices, November 3-8, 2013, Hualien, Taiwan

Synthesis of carbon-based nanomaterials
 Characterization and processing of carbon-based nanomaterials
 Devices and Applications of carbon-based nanomaterials
 Multiscale modeling and computation

<http://www.engconfintl.org/13ap.html>

2013 AAPS Annual Meeting Short Course #2: Quality Control of Nano Particulate Drugs: Manufacturing, Characterization, and Regulatory Considerations, November 10, 2013, San Antonio, Texas, USA

Manufacturing Methods
 Regulatory Perspectives
 Physical/Chemical Stability
 Standards Development

http://www.nxtbook.com/nxtbooks/aaps/annualmeeting2013_preprogram/#/114

NanoBIG: Nanotechnology in Healthcare, December 5-6, 2013, San Diego, CA, USA

Nanocomposites
 Medical devices
 Preventive healthcare applications

<http://www.tcbi.org/files/brochures/nanoBIGSanDiegoInformation.pdf>

BioNanoMed 2014, April 9-11, 2014, Krems, Austria

Nanomedicines Innovation
 Diagnostics and Therapy
 Regenerative Medicine
 Imaging Technology
 Nano Safety

<http://www.bionanomed.at/index.php?id=26>

REFERENCE SECTION

Nanobio- and Nanomedicine Companies

Listed alphabetically:

http://www.nanowerk.com/nanotechnology/nanomaterial/nanobiomedicine_a.php

Nano Organizations

National Center for Toxicological Research (NCTR):

<http://www.fda.gov/AboutFDA/CentersOffices/NCTR/default.htm>

National Nanotechnology Initiative (NNI):

<http://www.nano.gov/>

Nano Science and Technology Consortium

(NSTC): <http://www.nstc.in/>

Nano Science and Technology Institute (NSTI):

<http://www.nsti.org/>

The Nanotechnology Institute (NTI):

<http://nanotechinstitute.org/>

Nano Journals

American Chemical Society -- Nano Letters:

<http://pubs.acs.org/journal/nalefd>

Institute of Physics – Nanotechnology:

<http://iopscience.iop.org/0957-4484/>

Journal of Nanoscience and Nanotechnology:

<http://www.aspbs.com/jnn/>

NanoTrends - A Journal of Nanotechnology and its Applications: <http://www.nstc.in/journal/default.aspx>

BCC Research -- Nanotechnology Reports:

<http://www.bccresearch.com/index/category/code/nanotechnology>

Nanomedicine: Nanotechnology, Biology, and Medicine: <http://www.nanomedjournal.com/home0>

Nanomedicine:

<http://www.futuremedicine.com/page/about.jsp>

Nature Nanotechnology:

http://www.nature.com/nnano/focus/highlights/index.html?WT.mc_id=NM1110CT01

CONTACT

For further information, or if you have any questions about the Nanomedicines Alliance, please contact the Nanomedicines Alliance Secretariat at 1-202-230-5653 or info@nanomedicines-alliance.org.

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